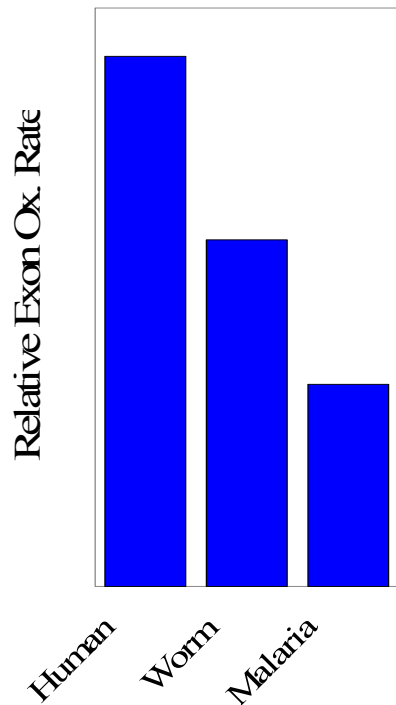


# Reducing Oxidation Rates of Essential Genome Domains

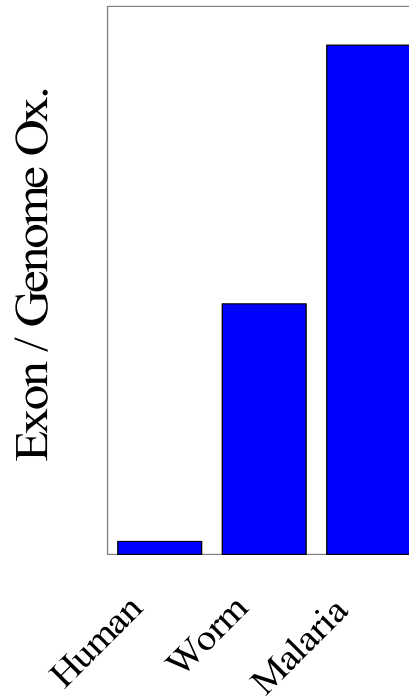
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## Statistical Analysis of Genome Compositions Shows That “Genomic Corrosion Engineering” is Widespread & Protective

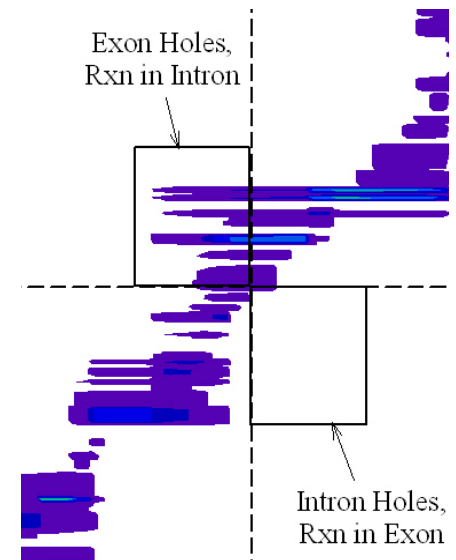
Guanine minimization  
ennobles 6 of 8 genomes,  
but not *Homo sapiens*



In humans, guanine in  
junk DNA scavenges  
98% of oxidants



Guanine in non-  
coding introns can  
cathodically protect  
protein-coding exons



# Reducing Oxidation Rates of Essential Genome Domains

Adam Heller & K.A. Friedman, University of Texas at Austin, DMR-0231403

- Education: Students contributing to this project
  - Undergraduate: Kristine McAndrews, B.S. 2003
  - Graduate: Keith Friedman, Ph.D 2003
- Infrastructure: Facilities for future work
  - Software and databases for analysis of oxidation of genomes
  - Collaboration with Jortner & Bixon at Tel Aviv University, two leading theorists of hole conduction in DNA